Supported Self-Driven Learning Operating System

Trust

Establishing trust between learners, learning partners & consumers that may never meet person-to-person.

With particular focus on achievements validation.

Version 1.0

Background

A key part of learning is the development of skills, which within the selfdriven protocol are recognised in the form of *achievements*.

An *achievement* is validated by the trusted learning partner that is witnessing or assessing the learner activity.

The skills earned by completing an achievement can be:

- added directly by the learning partner
- or as part of completing a project based on a project-template, with pre-assigned skills.

Key considerations:

- As a consumer of an achievement and associated skills, what is the trust path?
- Centralised v Decentralised? Can the system be manipulated/corrupted?

selfdriven uses a number of mechanisms to mitigate the risks associated with the key considerations.

Learning-Partner Levels

As set by selfdriven (centralised) or other validator (decentralised)

W	High Level - Well Known	e.g. Department of Education
K	Known - But not well-known	RTO
U	Unknown	Any other learning-partner

Trust Layers

Layer	Description	Technology
Data	Ensuring the collected data is immutable. Using cryptography for protection and integrity - ie unauthorised manipulation. Data or hashes on on-chain.	selfdrivenOS (centralised, but supported by entityOS, ISO27001) Cardano (decentralised)
Issuance	Trusting the issuer of the achievement	Using selfdriven certification of who they say they are and authorised.
Validation	Validation of the issuers and validation of the achievements issued based on categorisation based on risk levels in relation to harm. ie an achievement of working in a canteen is different to achievement of being able to practice as a medical practitioner.	Learning-partners: - Organisations (Associations, Collectives etc) - Individuals Learning partners can validate other learning partners - i.e. Department of Education can validate teachers as learning partners.
Consumers	The entities that consume the achievements etc - the trust-consumers. ie is that the achievement of the person as they state and who issued the achievement.	Learning-partners Organisations Individuals

Trust Components

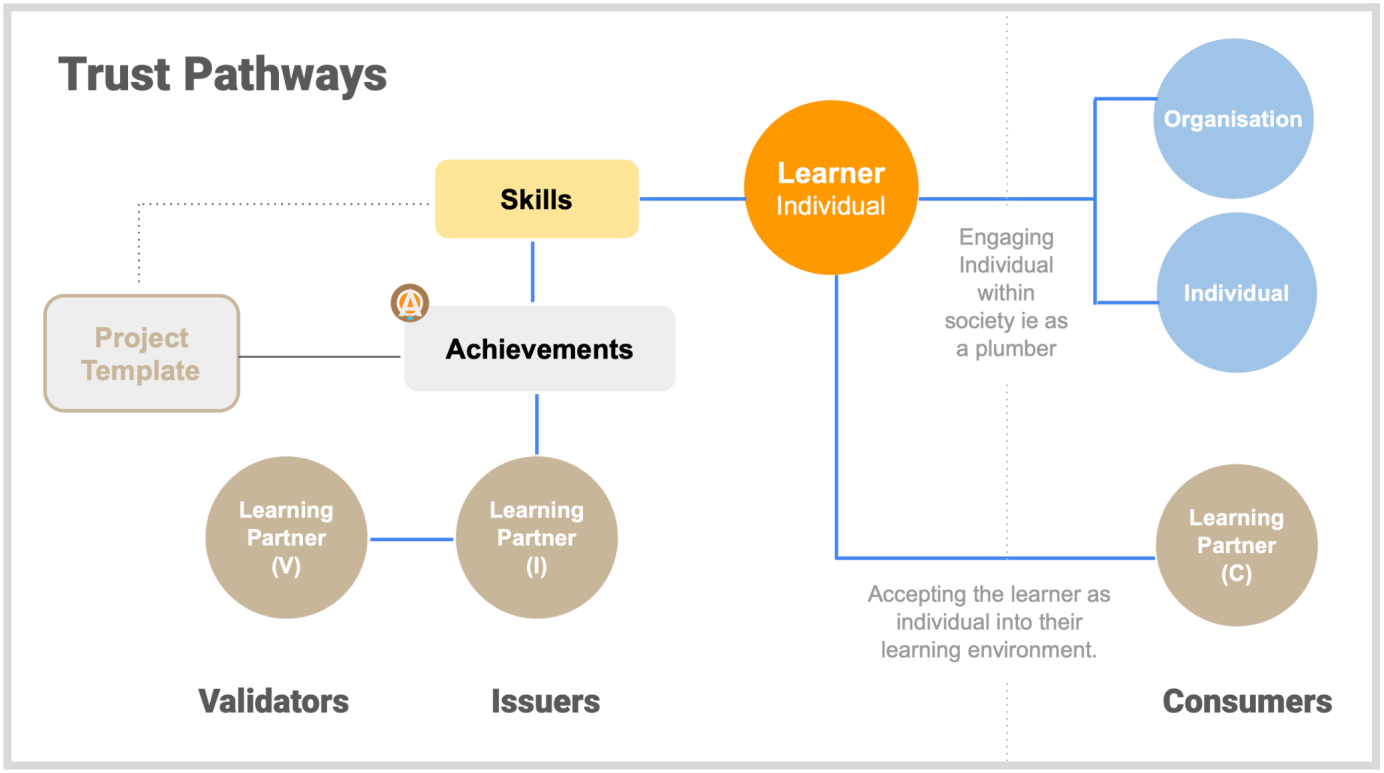
selfdriven will provide a verification service with identification checking of:

- Learning Partner Organisations
- Learners (or delegated via use of external existing identifiers like USI).

Consumers of the achievements and associated skills, can use a number of mechanisms to navigate the trust path to the point where trust is established to their required level i.e. by finding a path to a learning partner they have a trust relationship with or trust the validator of the learning-partner.

Mechanisms include:

- Query api.selfdriven.cloud to get achievement and issuer and validator details - assumes trust of selfdriven.cloud service.
- Query the Cardano blockchain using the selfdriven policy and associated validator data.



selfdriven will also provide a zero-knowledge validation service for querying.

Worked Examples

A/ Using app.selfdriven.cloud

A university wants to validate the skills of an learner/individual who wants to join their learning community to continue learning.

The university is registered with selfdriven and has set up *selfdriven Next Steps* templates to accept applications.

The learner is using the *selfdriven Next Steps* to apply to join their learning community.

The learner has **not** published their achievements on-chain.

After receiving the application; the university establishs trust in the skills linked to the application by following the trust path by:

1. View the skills
2. View the skills issuer and issuer-validators by:
    a. Manually verifying
    b. Set an option with only show skills issued or validated by:
        i. a selected set of learning-partners eg Department of Education.
        ii. issuers of validation that are at a specific level eg W for Well-Known.

B/ Using api.selfdriven.cloud

A university wants to validate the skills of an learner/individual who wants to join their learning community to continue learning.

The university is registered with selfdriven and but has **not** set up selfdriven Next Steps templates to accept applications.

The learner has **not** published their achievements on-chain, but has established a connection with the learning partner - so they can view their achievements.

The learner (individual applying to join the learning community) as part of the application sends their **selfdriven identifier (SDI)** to the university.

The university follows the trust path to establish trust in the skills linked to the application by:

1. Using software at the university queries app.selfdriven.cloud using the "get-achievements' method, passing:
    a. The learner SDI
    b. Set an option with only show skills issued or validated by:
        i. a selected set of learning-partners eg Department of Education.
        ii. issuers of validation that are at a specific level eg W for Well-Known.
2. Achievements and skills using the *selfdriven Skills Set** are returned back to the university software for validation.

* https://www.selfdriven.foundation/skills

C/ Using Cardano (On-Chain)

A university wants to validate the skills of an learner/individual who wants to join their learning community to continue learning.

The university is **not** registered with selfdriven.

The learner has published their achievements on-chain linked to their on-chain **selfdriven identifier (SDI).**

The learner (individual applying to join the learning community) as part of the application sends their **selfdriven identifier (SDI)** to the university.

The university follows the trust path to establish trust in the skills linked to the application by:

1. Using software* at the university queries Cardano blockchain for metadata passing:
    a. The selfdriven SDI token policy ID and SDI metadata ID
    b. The return data is then queried for the learner SDI
    c. And the queried to show skills issued or validated by:
        i. a selected set of learning-partners eg Department of Education.
        ii. issuers of validation that are at a specific level eg W for Well-Known.
2. Achievements and skills using the *selfdriven Skills Set** are returned back to the university software for validation.

* The selfdriven SDK includes a node app for querying the Cardano blockchain or blockfrost.io can be used directly.

Metadata example @
https://drive.google.com/drive/folders/12Bb6gnqi5m3eTFgGoRT2RmpVoMW6BAg0